# BioMap and Living Waters

# Guiding Land Conservation for Biodiversity in Massachusetts

## **Core Habitats of Halifax**

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is <u>not</u> intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

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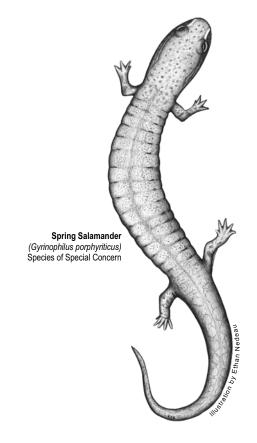
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\* Depending on the location of Core Habitats, your city or town may not have all of these sections.



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Guiding Land Conservation for Biodiversity in Massachusetts

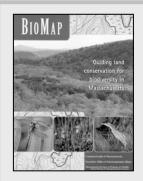
## Introduction

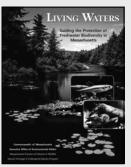
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, BioMap and Living Waters. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

#### What is a Core Habitat?

Both BioMap and Living Waters delineate Core *Habitats* that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the BioMap and Living Waters reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

## **Core Habitats and Land Conservation**

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the *riparian areas*, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

## In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as Supporting Natural *Landscape* provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was



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## BioMap and Living Waters:

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, *Critical Supporting Watersheds* highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from <a href="https://www.mass.gov/mgis">www.mass.gov/mgis</a>.

# **Understanding Core Habitat Species, Community, and Habitat Lists**

## What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the <u>entire</u> Core Habitat, not just the portion that falls within your city or town. For a list of <u>all</u> the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at <u>www.nhesp.org</u>.

The list of species and communities within a Core Habitat contains <u>only</u> the species and

**Table 1.** The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap		
	Species and Verified Natural Community Types	
Biodiversity Group	Included in BioMap	Total Statewide
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types
Living Waters		
	Species	
Biodiversity Group	Included in Living Waters	Total Statewide
Aquatic		
Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant



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# BioMap and Living Waters:

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species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

## What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- Endangered species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- *Threatened* species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- **Special Concern** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial watch list of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural

## **Legal Protection of Biodiversity**

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The *Massachusetts Natural Heritage Atlas* shows Priority Habitats, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and Estimated Habitats, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

communities reflects the documented number and acreages of each community type in the state:

- Critically Imperiled communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- *Imperiled* communities typically have 6-20 sites or few remaining acres in the state.
- *Vulnerable* communities typically have 21-100 sites or limited acreage across the state.
- **Secure** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.



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# Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific *fact sheets* at <a href="https://www.nhesp.org">www.nhesp.org</a>.

## **Next Steps**

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

## **Protecting Larger Core Habitats**

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be

very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

#### **Additional Information**

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone 508-792-7270, Ext. 200

by Fax: 508-792-7821

by Email: natural.heritage@state.ma.us.

by Mail: North Drive

Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - \* Natural Heritage Atlas, and more!



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# **BioMap: Species and Natural Communities**

## Halifax

## Core Habitat BM1153

Vertebrates

Common Name Scientific Name <u>Status</u>

Spotted Turtle Clemmys guttata Special Concern

Wetland Bird Habitat

Core Habitat BM1169

**Invertebrates** 

Common Name Scientific Name Status

New England Bluet Enallagma laterale Special Concern

Core Habitat BM1176

**Natural Communities** 

Common Name Scientific Name Status

Imperiled Alluvial Atlantic White Cedar Swamp

Vulnerable Alluvial Red Maple Swamp

Secure Red Maple Swamp

**Plants** 

Common Name Scientific Name Status

Long-Leaved Panic-Grass Panicum rigidulum ssp pubescens Threatened

Pale Green Orchis Platanthera flava var herbiola Threatened

Vertebrates

Common Name Scientific Name Status

American Bittern Botaurus lentiginosus Endangered

Blanding's Turtle Emydoidea blandingii Threatened

Special Concern Common Moorhen Gallinula chloropus

Eastern Box Turtle Terrapene carolina Special Concern

Eastern Spadefoot Scaphiopus holbrookii Threatened



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# **BioMap: Species and Natural Communities**

## Halifax

Four-toed Salamander Hemidactylium scutatum Special Concern

Grasshopper Sparrow Ammodramus savannarum Threatened

King Rail Rallus elegans Threatened

Long-eared Owl Asio otus Special Concern

Northern Red-bellied Cooter Pseudemys rubriventris Endangered

Pied-Billed Grebe Podilymbus podiceps Endangered

Spotted Turtle Clemmys guttata Special Concern

Upland Sandpiper Bartramia longicauda Endangered

Wood Turtle Clemmys insculpta Special Concern

# **BioMap: Core Habitat Summaries**

## Halifax

## **Core Habitat BM1153**

## Vertebrates

This Core Habitat encompasses Great Cedar Swamp and Burrage Pond in Halifax, as well as wetlands associated with Stump Brook. This mosaic of forested, shrub, and emergent wetlands provide significant habitat for Spotted Turtles. It also supports a diverse assemblage of breeding birds characteristic of the southern New England Coastal Plain, ranging from species that inhabit dry, early successional shrublands to those of forested wetlands. The Core Habitat includes a number of man-made impoundments and reservoirs, formerly constructed for commercial cranberry farming, but now part of the Burrage Pond Wildlife Management Area. Burrage Pond itself provides outstanding habitat for a variety of marsh birds and waterfowl, and intensive management should be able to create additional habitat for these and other types of wetland wildlife in the old cranberry impoundments.

#### Core Habitat BM1169

#### **Invertebrates**

This Core Habitat includes Robbins Pond in East Bridgewater and Robbins Reservoir (or Stump Pond) just to the east in Halifax, both of which provide important habitat for the New England Bluet damselfly. The Core Habitat is surrounded by development, but is located about 5 km from populations at Indian Head Pond in Hanson and Stetson Pond in Pembroke, which may allow for occasional dispersal of individuals among these three locations. Apparently, this Core Habitat is currently unprotected.

## **Core Habitat BM1176**

This large and diverse Core Habitat encompasses habitat for state-listed rare plants, amphibians, reptiles, marsh birds, and grassland birds. It includes over 10 miles of the Taunton River and substantial reaches of several of its tributaries. Also included are a variety of forested wetlands, including several large Alluvial Red Maple Swamps. Much of this key Core Habitat remains unprotected.

## **Natural Communities**

This Core Habitat contains a variety of forested swamps. It includes several large Alluvial Red Maple Swamps with intact hydrology and minimal disturbances. Alluvial Red Maple Swamps are a type of Red Maple Swamp that occurs in low areas along rivers and streams. Regular flooding enriches the soil with nutrients, resulting in an unusual set of associated trees and plants. One of the swamps in this complex is influenced by seepage and described as the only known one of its kind in the state.

#### **Plants**

A population of the Threatened Pale Green Orchis is found along a vernal pool near the Taunton River.



# **BioMap: Core Habitat Summaries**

## Halifax

## Vertebrates

This Core Habitat encompasses significant riverine, wetland, and upland habitats for Redbellied, Blanding's, Wood, Spotted, and Eastern Box Turtles. Significant habitat for Four-toed Salamanders is also present. Two important areas of freshwater marsh provide habitat for rare birds, including Pied-billed Grebes, American Bitterns, and King Rails. Significant breeding habitat for Upland Sandpipers and Grasshopper Sparrows is also present. Relatively large areas of habitat exist in this Core Habitat for birds of forested wetlands. Over 90% of this large and diverse area is unprotected, and management may be needed to mitigate the fragmentation effects of several paved roads that impair wetland and riparian connectivity. Further, grasslands in the area need annual mowing and, ideally, occasional burning.

# **Living Waters: Species and Habitats**

## Halifax

## Core Habitat LW164

**Invertebrates** 

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

Eastern Pondmussel Ligumia nasuta Special Concern

Tidewater Mucket Leptodea ochracea Special Concern

**Core Habitat LW222** 

Invertebrates

Common Name Scientific Name Status

Eastern Pondmussel Liqumia nasuta Special Concern

Tidewater Mucket Leptodea ochracea Special Concern

**Core Habitat LW317** 

**Exemplary Habitats** 

Common Name Scientific Name Status

Invertebrate Habitat ------

Invertebrates

Common Name Scientific Name Status

Tidewater Mucket Leptodea ochracea Special Concern

**Fishes** 

Common Name Scientific Name Status

Bridle Shiner Notropis bifrenatus Special Concern



# **Living Waters: Core Habitat Summaries**

## Halifax

## **Core Habitat LW164**

Monponsett Pond supports five of the state's twelve freshwater mussel species, including robust populations of the rare Tidewater Mucket and the Eastern Pondmussel. Mussels have been found anchored in the bottoms sands amongst moderately dense aquatic plants. During a recent visit to Monponsett Pond, successful reproduction of the Tidewater Mucket was evident, with young and old, as well as male and female mussels present.

## Core Habitat LW222

Silver Lake has supported a diverse and robust group of freshwater mussels. Five of the state's twelve mussel species are known to occur here, including the rare Tidewater Mucket and Eastern Pondmussel. The population of the Eastern Pondmussel in particular, was found to be robust and showing evidence of successful reproduction. Unfortunately, Silver Lake recently suffered a massive mussel die-off that was attributed to low water levels from drought conditions and water withdrawals. More studies are needed to assess the current status of these important mussel populations.

## **Core Habitat LW317**

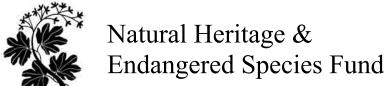
This Core Habitat spans a portion of the Taunton River and extends up into the Winnetuxet River in Halifax, supporting rare invertebrate and fish species.

Here the Taunton River supports six of the state's twelve freshwater mussel species, including the rare Tidewater Mucket. This species is more likely to be found in ponds, and this occurrence is one of only two known river occurrences in Massachusetts. The Taunton River is slow-flowing, and has a river bed of softer sands and silts, although mussels are most often found in the sections with firmer substrates.

In the Winnetuxet River, studies of the dragonflies, damselflies, and other invertebrates led to the conclusion that this is one of the least developed river segments containing some of the best remaining aquatic habitats in southeastern Massachusetts. A section of the Winnetuxet River also supports the rare Bridle Shiner. This fish Species of Special Concern is thought to be in decline in eastern Massachusetts as it was found at only 23% of its former sites in recent surveys. The Bridle Shiner is typically found in well-vegetated, quiet waters. It feeds on small aquatic insects and other invertebrates, and is an important part of the freshwater ecosystem as prey for larger fishes.

# Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the



To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: <a href="www.nhesp.org">www.nhesp.org</a>.